

VEROBOARD®

11" Round Surface Mount 120V Downlight with Changeable Color Temperature (3CCT)

Name: _____

Company: _____

Phone: _____

Email: _____

SPECIFICATIONS

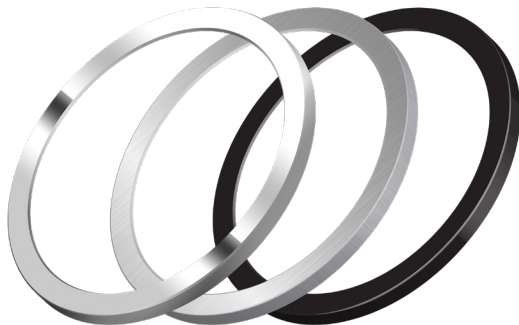


| | |
|-----------------------------|--|
| Model No. | HM04-PR12-24W120-3CCT-WSA |
| Voltage | 120V AC |
| Wattage | 24W |
| Color Temperature | Changeable Color (CCT) 3000K (Warm White) • 4000K (Natural White) • 5000K (Daylight) |
| Bulb Type | Integrated LED |
| Luminous Flux | 1680Lm |
| Rendering Index | CRI>80 |
| Body Color | White |
| Available Trim Color | Black Matt • Stain Nickel • Polished Chrome (Sold Separately) |
| Dimmable | Yes (Leviton and Lutron Dimmers) |
| Lifespan | 35000 Hours |
| Beam Angle | 120° |
| IP Rating | IP20 (Indoor Rated) |
| Dimensions | Ø 280mm x Depth 14mm (Ø 11" x 0.5") |
| Certification | ETL/Energy Star |



FEATURES

- Can be mounted on a regular ceiling using Surface Mounting Brackets.
- It also comes in Black, Nickel, and Chrome trim other than white color.
- We also carry similar fixtures in 8".
- Widely applicable for the ceiling in both commercial and residential buildings.
- Rated CRI>80 and meets the Canadian and United States standards.
- Has a high-quality reflector, that helps in avoiding glare.
- The LED light is integrated at the sides within the fixture that helps provide even light distribution without flicker.
- Dissipates very less heat and is safe to touch.



Polished Nickel

SKU: 666561420376

Satin Nickel

SKU: 666561420369

Black

SKU: 666561420352



Disclaimer:

The data and information contained in this specification sheet are subject to change without notice; the ratings supplied are provided based on the product manufacturer. The information contained in this specification sheet should not be considered a warranty, expressed or implied, including, but not limited to, a warranty of merchantability or fitness for a particular purpose. In no event shall Veroboard be liable for any incidental or consequential damages resulting from the use, misuse, or inability to use the product. This exclusion applies regardless of whether such damages are sought based on breach of warranty, breach of contract, negligence, strict liability in tort, or any other legal theory.



SKU: 666561420338

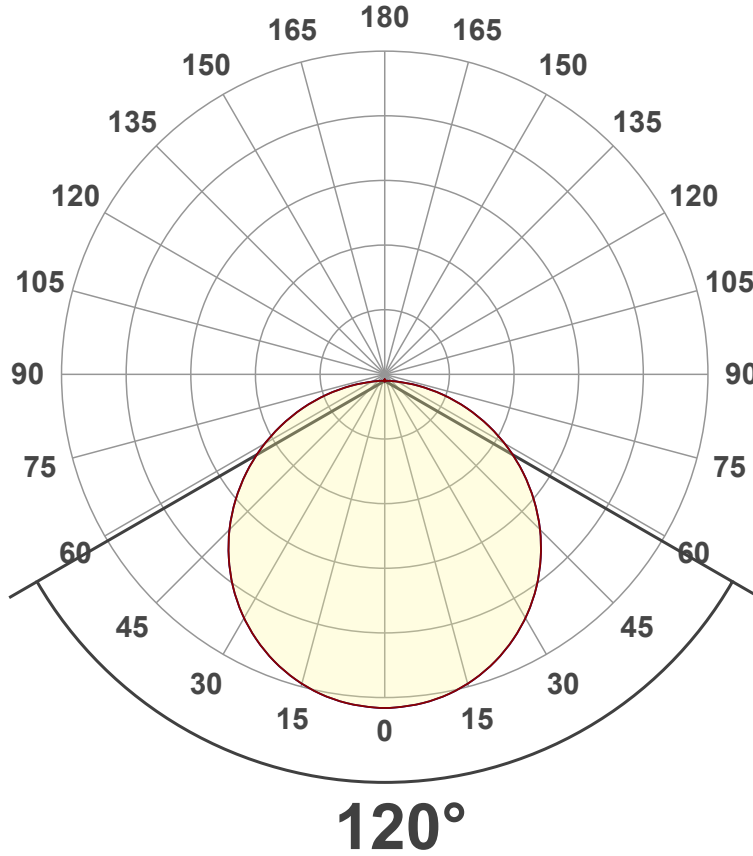
Light Measurement Report

Print date: 2023-01-09

Measurement date and time: 2023-01-09 11:01:54 AM – Measurement no. VFR-230109-0070-MS

Luminous Intensity diagram

Unit: 0-100% of peak intensity



Main Values

| | |
|----------------------|--------------|
| Output (total Lumen) | 1680 lm |
| Lumen Up% / Down% | 0.5% / 99.5% |
| Peak Intensity | 561 cd |
| Beam Angle (50%) | 120° |
| Beam Angle (90%) | 115.6° |
| Beam Angle (10%) | 115.6° |

Cut-off Angle

| | |
|--------------|--------|
| Average 2,5% | 177.5° |
|--------------|--------|

Field Angle

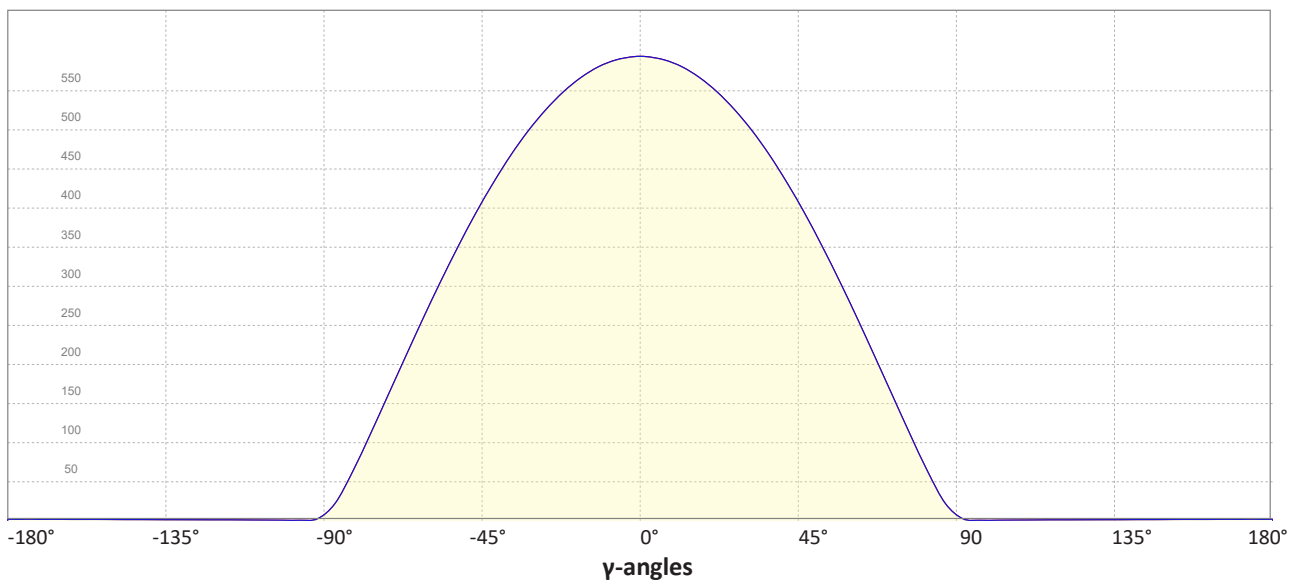
| | |
|-------------|--------|
| Average 10% | 164.6° |
|-------------|--------|

Intensity Ratio

| | |
|--------------|-------|
| In 120° cone | 76.9% |
| In 90° cone | 51.9% |

C000-C180
C090-C270

Linear distribution diagram - Intensity (candela) vs γ -angle



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Color details

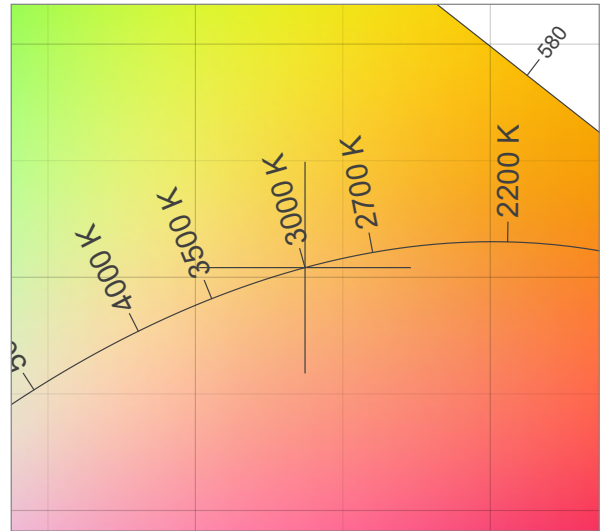
Correlated Color Temperature, Target CCT = 3000 K
 Correlated Color Temperature, Measured CCT = 2973 K
 Color Rendering Index CRI 83.9
 Color Rendering Index, R9 (red component) R9 = 11.3
 Color Rendering TM30-18 R_f 85.5 – R_g 96.1
 Color Quality Scale CQS = 83.0

MacAdam Steps
 Color coordinates CIE 1931 (x;y) = (0.437;0.404)
 Color coordinate CIEs 1960 (u';v') = (0.251;0.348)
 Color deviation from BBL Duv = -0.0003
 Color coordinate CIEs 1976 (CIELUV) (u';v') = (0.251;0.251)

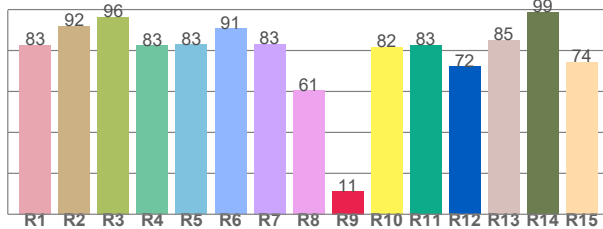
CIE 1931



CIE 1931 – zoomed on Planckian locus



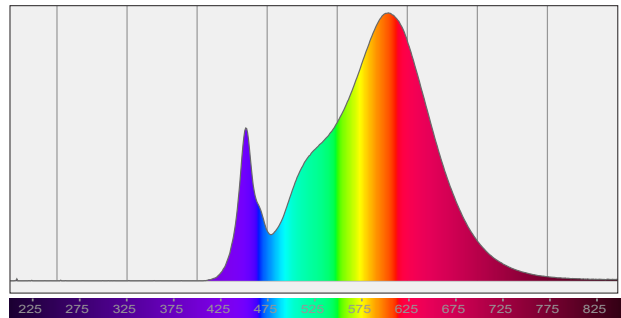
Color Rendering Index per reference color (CIE 1995)



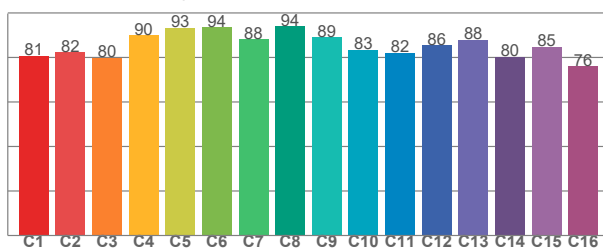
CRI R values, only R1-R8 are used to calculate final CRI value

| R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 | R15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 82.7 | 92.0 | 96.5 | 82.5 | 82.9 | 90.7 | 83.1 | 60.6 | 11.3 | 81.8 | 82.8 | 72.1 | 85.1 | 98.9 | 74.5 |

Spectral power distribution (SPD) / W/nm – 0-100%



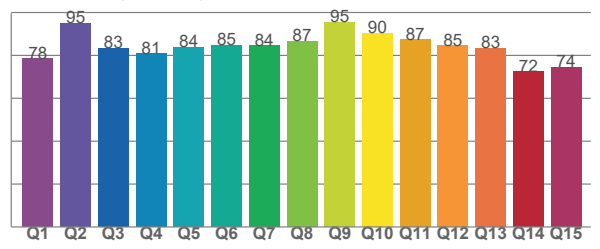
TM30-18 Rf-values per hue bin



TM30 C values, 16 binned values out of total of 99 C values

| C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 80.7 | 82.4 | 79.8 | 90.0 | 93.4 | 93.7 | 88.1 | 94.0 | 89.2 | 83.5 | 82.1 | 85.5 | 87.9 | 80.3 | 84.9 | 76.1 |

Color Quality Scale by reference color



CQS Q values

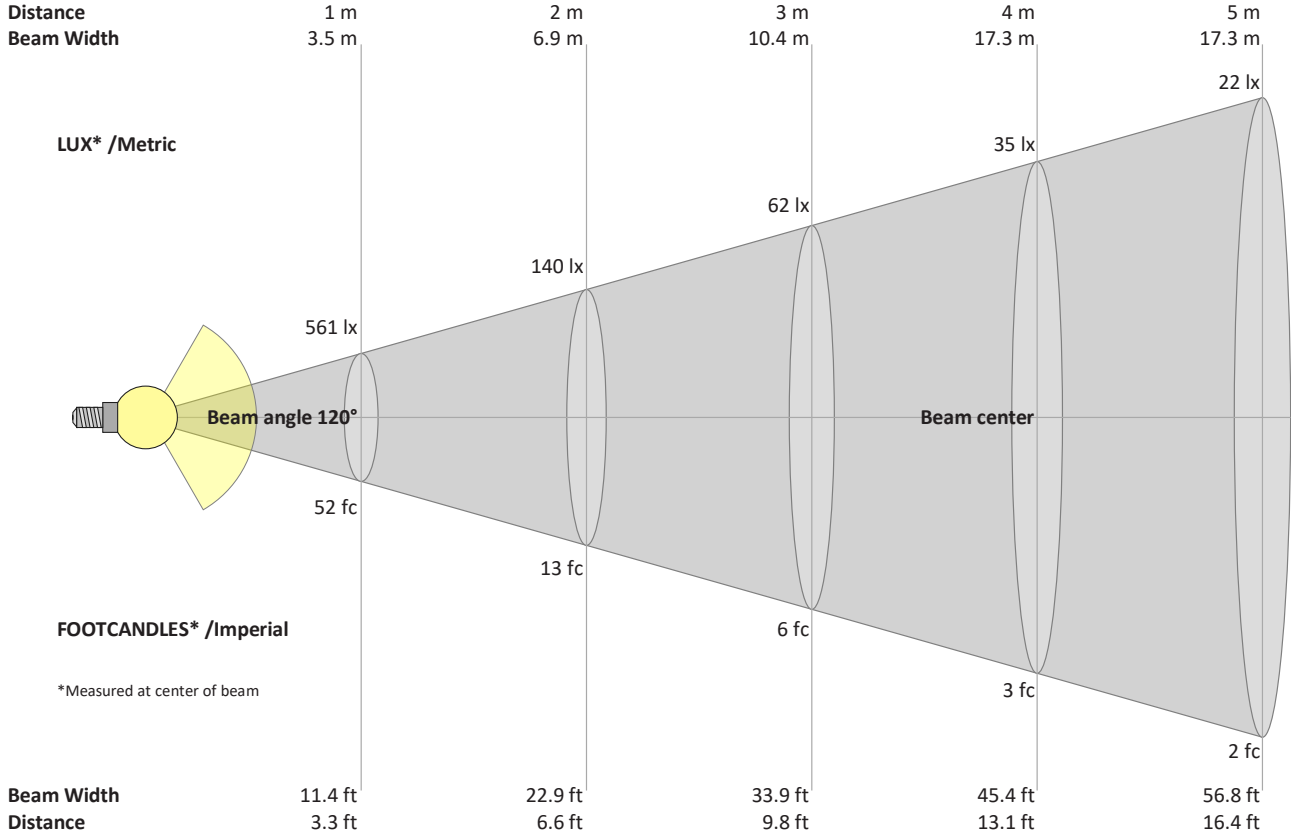
| Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 78.4 | 94.9 | 83.3 | 80.7 | 83.9 | 84.8 | 84.5 | 86.5 | 95.4 | 90.3 | 87.2 | 84.5 | 83.3 | 72.4 | 74.3 |

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Beam Details



Beam intensities from 1 – 20 m

| | | | | | | | | | | | | | | | | | | | | |
|------|-----|-----|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | m |
| 3.3 | 6.6 | 9.8 | 13.1 | 16.4 | 19.7 | 23 | 26.2 | 29.5 | 32.8 | 36.1 | 39.4 | 42.7 | 45.9 | 49.2 | 52.5 | 55.8 | 59.1 | 62.3 | 65.6 | ft |
| 561 | 140 | 62 | 35 | 22 | 16 | 11 | 9 | 7 | 6 | 5 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | lux |
| 52.1 | 13 | 5.8 | 3.3 | 2.1 | 1.4 | 1.1 | 0.8 | 0.6 | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | fc |

Intensities in 0° c-plane

| | | | | | | | | | | | | | | | | | | | | |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ |
| 561 | 558 | 551 | 540 | 525 | 505 | 481 | 452 | 420 | 385 | 346 | 304 | 260 | 215 | 168 | 121 | 76 | 35 | 9 | 1 | cd |
| 100% | 100% | 98% | 96% | 94% | 90% | 86% | 81% | 75% | 69% | 62% | 54% | 46% | 38% | 30% | 22% | 14% | 6% | 2% | 0% | of 0°val |

Intensities in 90° c-plane

| | | | | | | | | | | | | | | | | | | | | |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ |
| 561 | 558 | 551 | 540 | 525 | 505 | 481 | 452 | 420 | 385 | 346 | 304 | 260 | 215 | 168 | 121 | 76 | 35 | 9 | 1 | cd |
| 100% | 100% | 98% | 96% | 94% | 90% | 86% | 81% | 75% | 69% | 62% | 54% | 46% | 38% | 30% | 22% | 14% | 6% | 2% | 0% | of 0°val |

Intensities in 180° c-plane

| | | | | | | | | | | | | | | | | | | | | |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ |
| 561 | 558 | 551 | 540 | 525 | 505 | 481 | 452 | 420 | 385 | 346 | 304 | 260 | 215 | 168 | 121 | 76 | 35 | 9 | 1 | cd |
| 100% | 100% | 98% | 96% | 94% | 90% | 86% | 81% | 75% | 69% | 62% | 54% | 46% | 38% | 30% | 22% | 14% | 6% | 2% | 0% | of 0°val |

Intensities in 270° c-plane

| | | | | | | | | | | | | | | | | | | | | |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|
| 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | γ |
| 561 | 558 | 551 | 540 | 525 | 505 | 481 | 452 | 420 | 385 | 346 | 304 | 260 | 215 | 168 | 121 | 76 | 35 | 9 | 1 | cd |
| 100% | 100% | 98% | 96% | 94% | 90% | 86% | 81% | 75% | 69% | 62% | 54% | 46% | 38% | 30% | 22% | 14% | 6% | 2% | 0% | of 0°val |